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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/580,855	05/26/2006	Juan Carlos Sanchez Recio	06057	7585
23338 7590 08/31/2009 DENNISON, SCHULTZ & MACDONALD 1727 KING STREET SUITE 105 ALEXANDRIA, VA 22314				
EXAMINER				
RIPA, BRYAND				
ART UNIT		PAPER NUMBER		
1795				
MAIL DATE		DELIVERY MODE		
08/31/2009		PAPER		

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

# Office Action Summary

**Application No.**

10/580,855

**Applicant(s)**

SANCHEZ RECIO ET AL.

**Examiner**

BRYAN D. RIPA

**Art Unit**

1795

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-6 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-6 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 26 May 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SF/ICE)
- 4) ☐ Interview Summary (PTO-413)
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_
- Paper No(s)/Mail Date 3/8/07

## **DETAILED ACTION**

### ***Drawings***

1. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they include the following reference character(s) not mentioned in the description: 23 and 29.

Corrected drawing sheets in compliance with 37 CFR 1.121(d), or amendment to the specification to add the reference character(s) in the description in compliance with 37 CFR 1.121(b) is required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

### ***Specification***

2. The disclosure is objected to because of the following informalities: (1) paragraph 29 lines 9 and 12 have capitalization and punctuation errors.

Appropriate correction is required.

***Claim Objections***

3. Claims 1-6 are objected to because of the following informalities.

Specifically, it appears that in the second line of claim 1 the word "for" should be replaced with "or".

Also, the phrase "a non-hazardous waste" is used in line 13; however, this appears to be referring back to the manufacturing or industrial waste referred to earlier. If it is applicant's intent to refer back to the same waste stream earlier recited the phrase should so state explicitly using the same phraseology in order to avoid any potential ambiguity.

The same applies to the phrase "thermal sulphation process" which is used in line 16 of claim 1. If this limitation is referring back to the "initial sulphation phase" previously mentioned it is required to use the same terms.

Additionally, in claim 3 "the primary filtration step" is referred to in line 6. However, previously the same step is referred to as the "primary purification" step. As noted above, these limitations should be made so as to use the same terms when referring to the same steps in the process. Please note, claim 5 also refers to "the primary filtration step"

Furthermore, claims 4 and 6 each depend from themselves. The examiner is treating the claims as though they depended from the immediately preceding claim in each case. The examiner believes this interpretation to be most in keeping with applicant's intent based on the drafting of the claims.

The examiner wishes to bring to the attention of the applicant the word "magnesium" in the preamble of every claim. Based on the original filed PCT application, it appears that this should instead refer to "manganese" the object of the entire disclosure.

Appropriate correction is required.

***Claim Rejections - 35 USC § 112***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claims 1-6 are rejected as failing to define the invention in the manner required by 35 U.S.C. 112, second paragraph.

Specifically, claim 1 must be in one sentence form only. As presently drafted claim 1 contains several additionally clauses each being written in sentence form. These should be amended so as to be part of the single sentence of claim 1.

5. Claims 1-6 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Specifically, claim 1 recites a limitation that "a non-hazardous waste is made to disappear, producing another one of half the inert weight and having the property of

being self-compactable" (see lines 13-14). However, it is unclear what is being referred to as this newly produced waste, i.e. another one, which is only half of the inert weight.

Additionally, claim 1 recites the limitations "the washing sludges" and "the exhaust gases" in line 7; "the inert weight" in lines 13 and 14; "the amount of equipment" in line 19; and "the precipitation" in lines 21 and 22. Also, claim 3 recited the limitation "the electrolysis cell" in line 7. Finally, claim 6 recited the limitation "the mixer" in line 27. There is insufficient antecedent basis for these limitations in claims 1 and 3.

6. Claim 2 contains the trademark/trade name TEFLON. Where a trademark or trade name is used in a claim as a limitation to identify or describe a particular material or product, the claim does not comply with the requirements of 35 U.S.C. 112, second paragraph. See *Ex parte Simpson*, 218 USPQ 1020 (Bd. App. 1982). The claim scope is uncertain since the trademark or trade name cannot be used properly to identify any particular material or product. A trademark or trade name is used to identify a source of goods, and not the goods themselves. Thus, a trademark or trade name does not identify or describe the goods associated with the trademark or trade name. In the present case, the trademark/trade name is used to identify/describe polytetrafluoroethylene or "PTFE" and, accordingly, the identification/description is indefinite.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

7. Claims 1-6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Carosella (U.S. Pat. No. 2,766,197) (hereinafter referred to as "CAROSELLA") in view of Globus (U.S. Pat. No. 3,106,451) (hereinafter referred to as "GLOBUS").

Regarding claim 1, CAROSELLA teaches a process for obtaining electrolytic manganese from ferroalloy manufacturing waste having manganese (see col. 1 lines 49-68) comprising the steps of: an initial treatment of the manganese oxides (see col. 2 lines 27-30), a hydrometallurgical phase made up of four steps, a lixiviation step (see col. 2 lines 31-37), primary purification step (see col. 2 lines 51-60), secondary purification step (see col. 2 lines 60-65) and a conditioning step (see col. 2 lines 65-69) and then a last electrolysis phase (see col. 3 lines 3-6).

Additionally, CAROSELLA teaches the process purifying a non-hazardous waste (see col. 1 lines 59-68 teaching the use of manganese containing slags as a source material for the process), the purification steps to remove impurities consisting primarily of iron and aluminum being caused by pH control (see col. 2 lines 51-59), the removal of base metal impurities such as zinc being caused by the precipitation of the metal with sulfur (see col. 2 lines 51-59) and the production of a manganese metal product that is 99.9% pure (see col. 3 lines 3-6; col. 4 lines 20-23).

CAROSELLA, however, does not explicitly teach the initial treatment of the manganese oxides being an initial sulphation phase with the sulphation phase being a thermal process with near stoichiometric acid consumption.



However, GLOBUS teaches a process for obtaining electrolytic manganese where the initial treatment is an initial sulphation phase which is a thermal process with near stoichiometric acid consumption (see col. 1 line 59-col. 2 line 11 teaching the addition of sulfuric acid with the manganese oxides in a near stoichiometric amount in an exothermic process, i.e. thermal).

Moreover, one of ordinary skill in the art would have been motivated to combine the manganese sulphation steps of GLOBUS with the manganese production method of CAROSELLA because GLOBUS teaches the process being particularly suited for the treatment of low concentration manganese ore (see col. 1 lines 39-44). Furthermore, CAROSELLA teaches the use of waste slags generated from the production of ferromanganese having a manganese concentration within the range of GLOBUS (see col. 2 lines 7-21 teaching the waste slag from the production of ferromanganese having a manganese content of greater than 20% by weight). Thus, one of ordinary skill would have understood that the benefits of GLOBUS could also be applied to other low concentration manganese extractions such as in the treatment of manganese containing slags as taught by CAROSELLA.

Furthermore, CAROSELLA as modified by GLOBUS does not explicitly teach the waste produced being half that of the original and being self compactable. However, since CAROSELLA as modified by GLOBUS teaches all of the same method steps, one of ordinary skill in the art would expect that the same waste products to be produced. Additionally, CAROSELLA teaches the formation of the same byproducts, i.e. ferric

hydroxide, base metal sulfides and sulfuric acid. Consequently, the waste produced would be expected to be of a similar amount and have similar properties.

Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to combine the initial sulphation phase of GLOBUS with the method of CAROSELLA in order to obtain a method as claimed.

Please note, the "high added value product" limitation is being interpreted to merely require the production of metallic manganese, a valuable product. Also, the phrase "a non-hazardous waste is made to disappear" is being interpreted as merely requiring the purification or reclamation of some of the metals from the waste stream. The examiner suggests the use of another word besides "disappear" and a possible rephrasing of both the aforementioned limitations so as to clearly delineate the intended scope of each respective claim limitation.

Regarding claim 2, GLOBUS teaches the process for obtaining electrolytic manganese from ferroalloy manufacturing waste having manganese wherein the sulphation phase is carried out in a furnace in which exothermic reactions occur inside the furnace on TEFLON trays generating SO<sub>2</sub> gases (see col. 1 lines 59-72; col. 2 lines 9-11).

Additionally, although GLOBUS does not teach the furnace having TEFLON trays it is well known in the art to use TEFLON coated trays in furnaces as a non-reactive coating. Consequently, it would have been obvious to one of ordinary skill in the art to use TEFLON coated trays in the furnace of GLOBUS during the sulphation phase.

Regarding claim 3, CAROSELLA teaches the process for obtaining electrolytic manganese from ferroalloy manufacturing waste having manganese wherein the lixiviation step is carried out with the anolyte from the electrolysis cell (see col. 2 lines 31-36).

Regarding claim 4, CAROSELLA teaches the process for obtaining electrolytic manganese from ferroalloy manufacturing waste having manganese wherein the lixiviation step is performed while strongly stirring in the reactor coated with an antacid (see col. 2 lines 31-35 teaching the leaching with sulfuric acid, which one of ordinary skill in the art would have understood to require stirring in the leaching vessel in order to ensure that as much of the manganese as possible is removed by the lixiviant).

Please note, the examiner is treating the limitation "coated with an antacid" to merely require the leaching vessel to have an acid-resistant lining or to be made of materials having a natural resistance to acidic solutions. However, although CAROSELLA does not explicitly teach the leaching vessel having such a lining, it is well known in the art to have an acid-resistant lining especially when the leaching is to be done by an acid leaching process. Consequently, it would have been obvious to one of ordinary skill in the art to use a leaching vessel or tank having an acid-resistant lining as claimed.

Regarding claim 5, CAROSELLA teaches the process for obtaining electrolytic manganese from ferroalloy manufacturing waste having manganese wherein the

primary filtration step is carried out in the same reactor as the lixiviation by raising the pH of the pulp to near neutral levels and then subjecting the pulp to filtering in a filter press and washing with water thereby obtaining an inert waste (see col. 2 lines 51-56 and the figure teaching the raising of the pH to near neutral levels and then filtering with a filter press with subsequent washing of the filtrate or pulp with water).

Regarding claim 6, CAROSELLA teaches the process for obtaining electrolytic manganese from ferroalloy manufacturing waste having manganese wherein the washing water of the pulp can be used as added water to the mixer in the initial phase of the process or can be reused successive times to concentrate the manganese therein (see discussion above regarding the earlier claims as to the cited prior art meeting all of the earlier recited limitations).

Please note, the added limitations merely recite that the washing water "can be used" and not requiring that it be used. Consequently, the prior art washing water need only be capable of operating in such a fashion in order to meet the claimed limitations, which would clearly be possible in the modified prior art process.

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to BRYAN D. RIPA whose telephone number is 571-270-

7875. The examiner can normally be reached on Monday to Friday, 9:00 AM to 5:00 PM EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Alexa Neckel can be reached on 571-272-1446. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Harry D Wilkins, III/  
Primary Examiner, Art Unit 1795

/B. D. R./  
Examiner, Art Unit 1795